U.S. Department
of Transportation
Federal Aviation Administration

General Aviation Airworthiness Alerts

AC No. 43-16

ALERT NO. 223
FEBRUARY 1997

Improve Reliability-Interchange Service Experience

CONTENTS

AIRPLANES

HELICOPTERS

AGRICULTURAL AIRCRAFT

AMATEUR, EXPERIMENTAL, AND SPORT AIRCRAFT

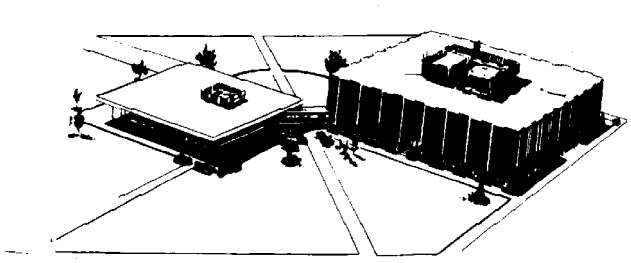
PROPELLERS AND POWERPLANTS

ACCESSORIES

AIR NOTES

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
WASHINGTON, DC 20590

GENERAL AVIATION AIRWORTHINESS ALERTS



FLIGHT STANDARDS SERVICE
Mike Monroney Aeronautical Center

The General Aviation Airworthiness Alerts provide a common communication channel through which the aviation community can economically interchange service experience and thereby cooperate in the improvement of aeronautical product durability, reliability, and safety. This publication is prepared from information submitted by those of you who operate and maintain civil aeronautical products. The contents include items that have been reported as significant, but which have not been evaluated fully by the time the material went to press. As additional facts such as cause and corrective action are identified, the data will be published in subsequent issues of the Alerts. This procedure gives Alerts' readers prompt notice of conditions reported via Malfunction or Defect Reports. Your comments and suggestions for improvement are always welcome. Send to: FAA;
ATTN: Maintenance Support Branch (AFS-640);
P.O. Box 25082; Oklahoma City, OK 73125-5029.

AIRPLANES

AERONCA

Aeronca **Engine Oil Leak**
Model 7AC **7930**

The operator reported an engine compartment oil leak and requested that it be repaired.

The oil leak source was traced to a 45-degree elbow fitting at the crankcase. This fitting was used to connect the oil pressure line to the firewall. The defective fitting appeared to be an "automotive" type and was replaced with an aviation quality fitting (P/N MS20823-4D) with a Number 60 restrictor. Engine oil system hoses and fittings deserve close attention during inspections and maintenance.

Part total time not reported.

BEECH

Beech **Nose Landing Gear**
Model C24R **Failure**
Sierra **3260**

Information for this article was furnished by the FAA's Aircraft Certification Office located in Wichita, Kansas. This information resulted in the issuance of Safety Recommendation 94.195.

The nose landing gear collapsed during landing; however, the nose gear "down" light was illuminated.

As a result of this incident, the manufacturer has issued Service Bulletin (SB) 2688. This SB announces the availability of a kit (P/N 23-8011-1), and allows the installation of an additional "down-lock" switch in the nose gear "down-lock" sensing circuit. This kit is

applicable to Models A24R, B24R, and C24R aircraft. Consult the SB for more specific information.

Part total time not reported.

Beech Model S35 Bonanza — **Flight Control Flutter 2720 and 2730**

The pilot reported that the aircraft began to shudder violently shortly after takeoff. An immediate emergency landing was made.

The left ruddervator trim tab horn (P/N 35-660043-23) was found broken during the investigation. The horn was broken midway between a rivet and bolt hole. The submitter did not offer a cause for this failure. It is recommended this area be given close attention during inspections and maintenance.

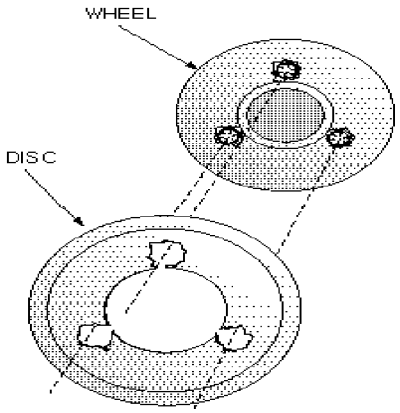
Part total time-3,485 hours.

Beech Model A36 Bonanza — **Wheel Brake Disk Failure 3242**

The right wheel brake failed while the aircraft was taxiing to the parking ramp.

An inspection disclosed the brake disk (P/N 164-32505) was torn off of the wheel assembly. (Refer to the following illustration.) The attachment bolts were intact, and part of the brake disk was still secure under them. The brake disk was manufactured by Cleveland. The submitter stated this was the second occurrence of this defect on the same aircraft. The other failure occurred on December 26, 1995, with a total operating time of 1,617 hours. It was speculated this defect could have been caused by "improper alloy castings or by cracks around bolt holes."

Part total time-1,755 hours.



Beech Model BE58 Baron — **Elevator Skin Crack 5522**

A crack was found in the left elevator skin during a scheduled inspection.

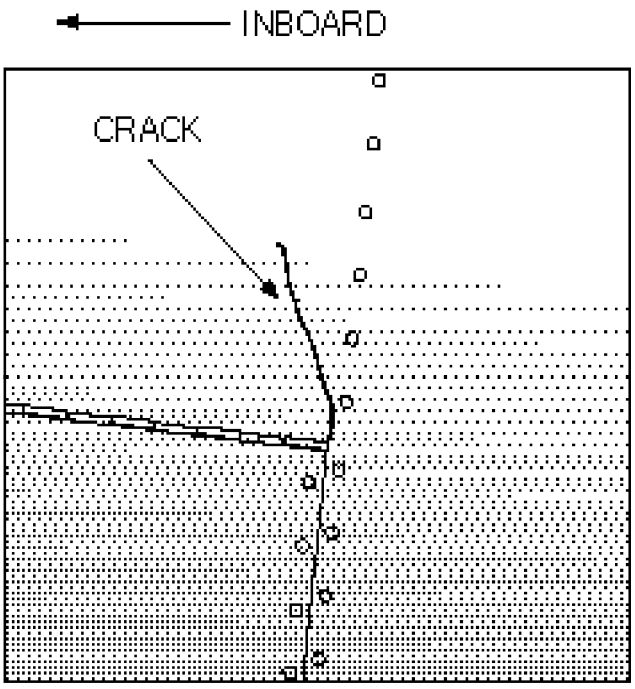
The crack appeared to originate at the trailing edge of the forward skin and began at the outboard corner of the trim tab cutout. The crack was approximately 4 inches long. (Refer to the following illustration.) The submitter offered three possible causes for this defect.

1. The trim tab actuating mechanism was excessively loose; however, the mechanism was no more loose than is commonly found on most aircraft of this model.

2. Oil canning of the skin.

3. Aft center-of-gravity (CG) loading. Aft CG loading reduces the aerodynamic loading of the elevator and trim tab, this combined with a loose trim tab, and oil canning could have induced a buzz or flutter which resulted in a crack.

Part total time not reported.



LOWER SIDE OF ELEVATOR

Beech **Main Landing Gear**
Model E-90 **Failure**
King Air **3210**

After an incident involving the right main landing gear, an investigation revealed the cause was failure of the upper torque knee (P/N 50-810034-4).

When this part was replaced, the new part was constructed differently, which made it more structurally substantial. This finding prompted an inspection of other like aircraft in the operator's fleet. The results of that inspection were not reported. The cause of this defect was suspected to be metal fatigue due to high-operating hours/cycles and age. High-time aircraft deserve close attention in this area during inspections and maintenance.

Part total time-10,078 hours.

Beech **Engine Oil Leak**
Model 95-B **7920**
Baron

The pilot reported oil began leaking from the right engine during flight. A precautionary landing was made, and a maintenance technician was summoned.

It was discovered that the oil cooler outlet hose (P/N 6010000-8D) had a small hole, which was caused by chafing. The submitter stated the hose was chafing against the engine intake tube due to a broken support clamp. The cause of the support clamp failure was not reported. The condition of all support clamps should be checked at every opportunity.

Part total time not reported.

Beech **Wiring Defects**
Model B100 **2460**
King Air

The four gage wires, which run from the firewall power connector to the starter/ generator, were found cracked during a scheduled inspection.

The wire insulation was cracked parallel to the wires. Some of the cracks were over 3 inches long and exposed the center conductor. These defects were found on the left engine, and the five affected wires were K2D4, K2F4, P10A4, P10C4, and P10E4. The submitter stated this was the third occurrence of this defect on like aircraft found by their operation.

Part total time not reported.

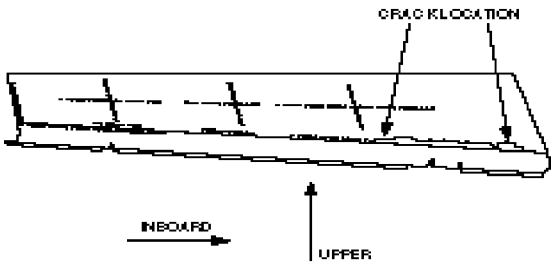
Beech **Aileron Skin**
Models 100, A100, **Cracking**
and B100 **5751**
King Air

Information for the following article was furnished by the FAA's Aircraft Certification Office (ACE-115) located in Wichita, Kansas.

Also, this information resulted in the issuance (by the FAA) of Safety Recommendation 96.151.

Reports of cracking in the upper surface of the ailerons on these models indicate a possible systemic problem. Most of the reported cracks have been located on the right aileron, which does not have a trim tab. (Refer to the following illustration for crack location and orientation.) The exact location and orientation of the cracks varied from one case to the next. Although, they were generally found in the upper skin just above the aileron drive mechanism.

Part total time not reported.

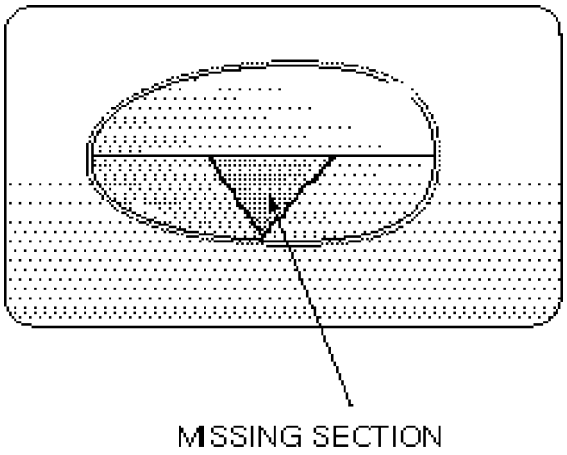


Beech **Window Failure**
Model 200 **5620**
King Air

The pilot reported hearing an abnormal noise during flight.

An inspection of the aircraft revealed the right rear baggage compartment window (P/N 101-440042-4) was broken, and a section was missing. (Refer to the following illustration.) The submitter could not determine the cause of this failure, and the age of the window was not reported. Small flaws can progress to the point of failure if not corrected. It would be wise to pay close attention to this area during scheduled inspections and maintenance.

Part total time not reported.

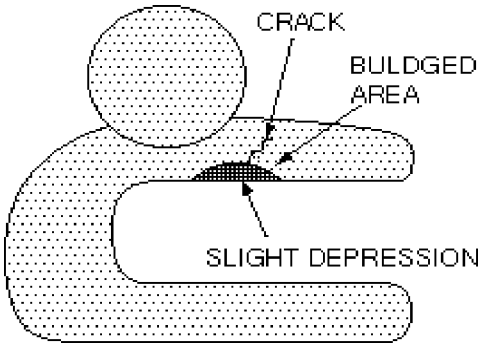


Beech **Defective Landing**
Model 2000 **Gear Uplock Hook**
Starship **3230**

A slight depression was found in the nose landing gear uplock hook during a scheduled inspection.

The area on the side of the uplock hook assembly (P/N 122-820032-1) was bulged, and the depression was located at the point where the uplock roller strikes. (Refer to the following illustration.) The uplock assembly was removed. A crack was found originating from the center of the depression. Any wear or depression found on the uplock hook should be thoroughly investigated.

Part total time-1,027 hours.



CESSNA

Cessna Model 172N Skyhawk — **Obstructed Flight Controls 2701**

The control yoke became jammed in the "nose-down" position during a preflight check of the flight controls.

An investigation disclosed the radio rack cooling plenum had vibrated loose and was obstructing movement of the flight control yoke. The plenum (P/N 157040-1) was located next to the copilot's yoke assembly and had fallen into the path of the yoke. Only one of the four plenum-retaining clamps/springs was still attached, and it was not properly installed. It was suggested that adherence to the manufacturer's avionics installation manual may prevent recurrence of this defect. Proper installation of avionics equipment should be checked during all scheduled inspections and maintenance.

Part total time-3,133 hours.

Cessna Model 172RG Cutlass — **Main Landing Gear Crack 3213**

The maintenance technician noticed a section of paint missing from the left main landing gear axle attachment area during a 100-hour inspection.

Further examination disclosed the axle fitting, which attaches to the landing gear leg, was cracked. The crack ran across the top of the casting and down to an attachment bolt hole. A dye-penetrant inspection revealed the casting was cracked completely through the casting. This aircraft was being used in a training environment, and the submitter believed this contributed to this defect. Since aircraft used for training are sometimes subjected to harsh treatment (especially on the landing gear), it is recommended that full attention be given to this area during scheduled inspections and maintenance.

Part total time-5,812 hours.

Cessna Model 172RG Cutlass — **Nose Landing Gear Malfunction 3230**

The pilot reported a landing gear malfunction during flight, and the gear was cycled several times. The nose gear would not indicate "down-and-locked" after retraction and extension.

The "up stop" pad was found worn down to approximately .25 inch thick during an investigation. This wear allowed the nose gear to go beyond the normal "up" position, and the nosewheel fork bound itself in the wheel well. The submitter stated the maintenance manual does not list a minimum thickness for the "up stop" pad. It was suggested the "up stop" pad and the bumpers be inspected for proper thickness and condition each 100 hours of operation.

Part total time-6,128 hours.

Cessna Model 172RG Cutlass — **Main Landing Gear Failure 3230**

The right main landing gear failed to extend and lock in the "down" position. The pilot stated that all attempts to secure a "down-and-locked" indication failed, and a safe "gear up" landing was made.

An inspection revealed the right main gear pivot assembly (P/N 2441100-1) had cracked in the spline area adjacent to the bearing inner race. This was determined to be the cause of the gear failure. This area deserves full attention during scheduled inspections and maintenance. This part had been inspected in accordance with Service Bulletin SEB90-1 approximately 981 operating hours prior to this occurrence.

Part total time-2,200 hours.

Cessna Model 177 Cardinal — **Fuel Hose Failure 2820**

The pilot reported a fuel leak which appeared to originate in the engine compartment.

An inspection revealed the engine fuel pressure hose (Cessna P/N S1236-3-0092) was leaking through the hose wall. The hose condition had deteriorated due to age. The metal identification tag attached to the hose indicated it had been manufactured in the second quarter of 1986 ("2Q86"). The hose had been manufactured by Aeroquip, which has issued Service Bulletin AA135 addressing this problem. The Aeroquip part number is 601000-3-0092.

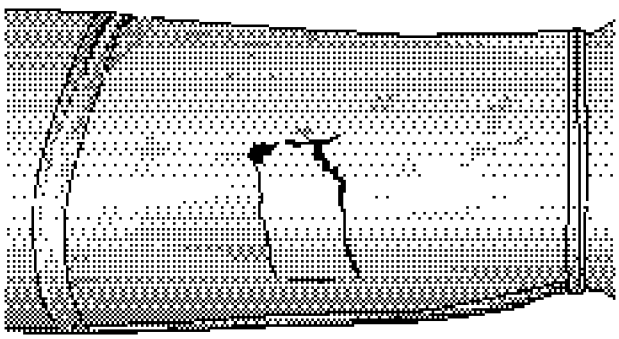
Part total time not reported.

Cessna Model 208B Grand Caravan — **Engine Exhaust Duct Crack 7800**

An engine exhaust stain was noticed by the pilot during a preflight inspection, and maintenance personnel were summoned.

An inspection revealed a large crack in the upper surface of the engine exhaust duct (P/N 2654018-18). (Refer to the following illustration.) It was necessary to replace the exhaust duct. It was recommended this part be closely inspected during scheduled inspections and maintenance.

Part total time-2,285 hours.



Cessna Model 340 — **Main Landing Gear Torque Tube Corrosion 3210**

Information for the following article was furnished by Mr. Stephen Smith, an Airworthiness Inspector, with the FAA's Flight Standards District Office located in Hillsboro, Oregon.

The main landing gear had been removed for installation of a Cessna repair kit (P/N SK414-9E). After installation of the kit, the torque tubes (P/N's 5045010-18, -19) were being cleaned and inspected for cracks prior to reinstallation. No cracks were found; however, when the torque tubes were shaken, something made a "scraping" sound inside both torque tubes.

Both of the torque tube end plugs were removed, and an alarming amount of "rust scale" was removed. The interior of the torque tube was inspected with a borescope, and the walls were found covered with severe corrosion. Cessna Technical Support was contacted concerning this condition. Their response was that if the corrosion had consumed more than 10 percent of the torque tube's wall thickness, the torque tube would no longer be airworthy. An ultrasonic inspection of the torque tubes revealed one tube was marginal and the other exceeded the 10 percent limit.

While attempting to obtain serviceable used parts, all parts supplied by vendors were determined to be in the same poor condition, and all parts were rejected.

Needless to say, that failure of this part would present a very hazardous situation which could endanger life and property. The torque tubes may appear to be in good condition from the outside and have a large amount of corrosion on the inside. Only by removing the end plugs can the torque tube interior be properly inspected. A search of the FAA's Service Difficulty Report data base disclosed 40 reported incidents where these torque tubes cracked or failed. This is a very

significant number, and the submitter suggested each operator establish a periodic, calendar, and flight-time schedule for inspection of the interior of these torque tubes. The ultrasonic inspection technique seems to be the most reliable inspection method for determining tube wall thickness.

Part total time-2,659 hours.

Cessna Model 414A Chancellor — **Split Flap 2750**

The pilot reported experiencing a "split-flap" condition during a landing approach. A safe landing was made, and the aircraft was delivered to maintenance.

An investigation determined the left flap lower (extend) cable (P/N 5000008-63) was broken. The upper (extend) cable (P/N 5000008-62) and both return cables (P/N 5000008-61) had broken strands and required replacement. Another aircraft (Cessna Model 421C) was inspected for flap cable defects. After relieving the cable tension and "flexing" the cables, broken strands were found on all cables. The submitter stated that approximately 30 to 40 percent of the cable strands "popped" out of each cable. This aircraft had a total time of 7,216 operating hours. Other similar aircraft with approximately the same number of operating hours were inspected, with similar findings on all the aircraft. The cables did not display any sign of defects when they were properly installed. Therefore, it was suggested the cable tension be relieved prior to inspection. The Service Difficulty Reporting data base contains five occurrences in the past 5 years where a flap cable failed. The submitter believes there may have been many other unreported occurrences.

The submitter suggested a "life limit" be established for these cables, and that all operators and maintenance personnel inspect for this condition at every opportunity. This is especially important for aircraft with 6,000 plus operating hours.

Since this defect is potentially detrimental to flight safety, this report and the supporting data has been sent to the responsible FAA aircraft certification office for possible Airworthiness Directive (AD) action.

Part total time-6,775 hours.

Cessna Model 500 Citation — **Emergency Landing Gear System Malfunction 3230**

The landing gear emergency extension system failed while being tested during a scheduled inspection.

The emergency landing gear blow-down bottle would not actuate, and the handle would not lock out. An inspection revealed the "grooved" pin (P/N MS35675-14), inside the emergency gear handle, was broken. The pin was replaced, and the system operated properly. The submitter speculated this failure was due to improperly resetting the system after a previous activation. It was suggested that maintenance personnel consult the maintenance manual for this procedure.

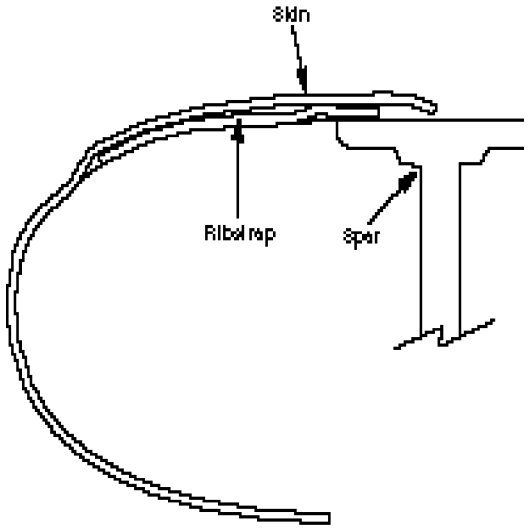
Part total time-5,617 hours.

Cessna Model 550 Citation — **Wing Skin Deformed 5712**

A "bump," measuring approximately .050 inch, was found in the left wing skin at Wing Station (WS) 91.

Further inspection disclosed the wing rib upper strap (P/N 5522620) was joggled to fit between the spar and the rib. When the assembly was completed at the factory, the strap was apparently installed above the spar. (Refer to the following illustration.) This extra thickness created the "bump" in the skin. The manufacturer could offer no reason for this defect. The submitter suggested that all operators of like aircraft inspect the aircraft for this condition.

Part total time-4,264 hours.



ERCOUPE

Ercoupe
Model 415-C

Engine Fuel Starvation
2822

The aircraft engine failed during flight. A successful emergency landing was accomplished.

An investigation revealed the fuel pump, used to transfer fuel from the wing tanks to the fuselage tank, was inoperative. The pump body was cracked between the upper and lower chambers, and there was evidence of severe corrosion. Due to the crack, the pump could not maintain its prime and would not move the fuel. The submitter stated that "the pump had not been inspected properly in several years." Proper maintenance procedures, in accordance with the manufacturer's service instructions, would have detected and corrected this problem prior to failure.

Part total time-2,080 hours.

PIPER

Piper
Model PA-18
Super Cub

Fuel System Blockage And Contamination
2820

The pilot reported that engine power was lost just after selecting the right fuel tank for engine fuel supply.

Both of the fuel lines connected to the right fuel header tank were found completely blocked during an investigation. It was determined the lines were blocked with fuel hose material from the interior of the hoses (Mil-6000). The fuel hoses were severely deteriorated and were possibly 20 years old. Their exact age could not be determined. This aircraft had been operated on both "auto-fuel" and 100LL. Aircraft flexible hoses have been the subject of many articles in aviation publications and the cause of accidents and incidents involving personal injury and aircraft damage. Most flexible hose and aircraft manufacturers have established life limits for these products which should be adhered to strictly. Common sense dictates that these products will remain serviceable only so long. When they begin to degrade, they pose a serious hazard to flight safety and should be removed from service.

Part total time not reported.

Piper
Model PA-24-250
Comanche

Stabilator Torque Tube Corrosion
2730

The stabilator torque tube was removed to accommodate painting the aircraft. It was necessary to remove the inside block assembly first because the stabilator could not otherwise be removed.

The stabilator would not slide off due to the buildup of corrosion products on the torque tube (P/N 20203-02). The submitter stated the

severe corrosion was due to moisture and contaminate retention in the assembly. It was recommended the stabilator be removed for inspection and cleaning every 2 years.

Part total time not reported.

Piper **Landing Light**
Model PA-28-151 **Failure**
Warrior **3340**

The landing light retainer (P/N 65372-00) was found cracked while changing the lamp.

The retainer was cracked around the upper stud and the screw hole. The submitter speculated the lamp failed prematurely due to excessive vibration which was allowed by the cracked retainer. The landing light retainer should be checked for cracks during each inspection, including preflight. Complete failure of the retainer could cause the landing light assembly to become entangled in the propeller.

Part total time-4,940 hours.

Piper **Carburetor Heat Muff**
Model PA-28-161 **Screen Failure**
Cadet **7160**

During an annual inspection, the carburetor heat muff screen (P/N 35631-04) was found broken.

The heat muff screen was badly deteriorated, had broken loose from its attachment, and had been ingested into the engine air intake system. The screen was mounted in the muffler heat exchanger. The submitter speculated that age and heat caused the screen to fail. It was suggested the security and condition of the heat muff screen be inspected each time the muffler shroud is removed.

Part total time-3,886 hours.

Piper **Fuel Drain Valve**
Model PA-28R-200 **Failure**
Arrow **2820**

The fuel drain valve attached to the "gascolator" was difficult to push and drain during a preflight inspection. When the pilot made a slight pull on the valve in an attempt to stop the fuel flow, the valve stem separated from the valve. This allowed fuel to flow freely (with no means, other than the fuel shutoff valve) of shutting off the fuel.

The retaining collar was found separated from the valve stem end when the drain valve (P/N Curtis CCA-1550) was removed. The submitter stated: "If the stem fell out in flight, the engine would stop." It was suggested these valves be replaced at least once a year. The drain valve, which failed in this case, was approximately 22 years old.

Part total time-5,800 hours.

Piper **Wheel Brake Control**
Model PA-31-350 **Interference**
Chieftain **3242**

The aircraft became "stuck" on the runway, after landing for the second time, due to "locked brakes."

No defects could be found after the first occurrence, and the aircraft was returned to service. After the second occurrence, an investigation disclosed the "coil cord" from the pilot's yoke became entangled in the parking brake "T-handle," and engaged the parking brake when the yoke was pulled aft. This presents a very dangerous situation, and in this case, it was fortunate that no injury or aircraft damage resulted.

Part total time not reported.

Piper **Main Landing Gear**
Model PA-31-350 **Malfunction**
Chieftain **3230**

The pilot retracted the landing gear after takeoff, the right main gear remained extended, and the "gear down" green light remained illuminated. An uneventful precautionary landing was made after extending the remaining landing gear.

An inspection disclosed the right main gear down-lock rod fork (P/N 41793-00) was broken. No wear was found when the rod-fork attachment bolt was examined. The submitter stated this bolt is frequently found worn. The submitter speculated the rod-fork bolt was overtorqued during prior installation. This induced a stress concentration in the rod fork, and led to its eventual failure. It was recommended the proper number of washers be used to prevent the nut from "bottoming out" and ensuring the fork will rotate freely after the proper torque is applied.

Part total time not reported.

Piper **Wheel Brake**
Model PA-31-350 **Malfunction**
Chieftain **3242**

A customer complaint was received that the aircraft brake pedals were locked, and the brakes were dragging. An investigation was performed, and contamination of the brake system was found.

The brake system contained approximately .25 pint of brake fluid, with the rest of its capacity containing water. The water froze when the temperature dropped below freezing. Heat was applied to the accessible areas of the system, and approximately 1 quart of water was drained. The brake system was then purged, serviced with the correct fluid, and a leak check was accomplished. This aircraft had been operated in a tropical climate prior to being brought into a cold climate. The system had operated normally until freezing temperatures were encountered. The submitter speculated that the possible sources of water contamination were:

1. The drain line for the access cover was plugged allowing water to leak around the filler plug.

2. Since the aircraft was equipped with a windshield-washer system, it is possible the brake reservoir was mistaken for the windshield-washer reservoir.

Part total time not reported.

Piper **Main Landing Gear**
Model PA-34-200T **Malfunction**
Seneca **3230**

A takeoff was made from a runway which was covered with snow and slush.

The landing gear was retracted, and the nose gear quickly froze in the "up" position. The pilot landed the aircraft with the nose gear retracted and both main gear extended, which caused moderate damage to the aircraft. The submitter recommended the Pilots Operating Handbook (POH) be revised to preclude operation during the conditions previously described. However, no revision can compensate for a lack of common sense.

Aircraft total time-15,429 hours.

Piper **Engine Primer Valve**
Model PA-46-310P **Clamp Failure**
Malibu **7310**

The pilot reported the engine was hard to start and appeared to run very lean.

When the engine was inspected, a clamp (P/N TCM 646432), used to support the fuel primer valve, was found broken. This allowed the primer valve to move freely, and it was retained only by the fuel line. Eventually, the fuel line broke adjacent to the "B-nut" connection at the primer valve. This condition could have resulted in an engine fire, if given the proper conditions. The security of engine

compartment equipment is vitally important and should be given close scrutiny at every opportunity.

Part total time not reported.

ROCKWELL INTERNATIONAL

Rockwell International Model 500S Twin Commander — **Flight Control Pulley Damage 2720**

Both of the rudder pulley brackets were found cracked while conducting a scheduled inspection in the nose area.

The cracks were located at the bend radius on each bracket. When the new pulley brackets (P/N's 530065-15 and -16) were ordered, the part numbers had been superseded. The submitter suggested these brackets be closely inspected and replaced if cracks are found. Although no cause for this defect was offered, it is likely that age and metal fatigue were significant contributing factors.

Part total time-11,068 hours.

HELICOPTERS

AEROSPATIALE

Aerospatiale Model AS350B — **Centrifugal Compressor Cover 7230**

The engine installed in this aircraft was an Arriel Model 1B. Two "metal tabs" were found on the engine deck during a daily inspection.

The two "metal tabs" were found to have originated at the centrifugal compressor cover. The cover was cracked around the circumference, and the tabs were released as the crack progressed. Fortunately, the broken tabs exited the engine through the bleed valve and were not ingested into the engine.

The submitter recommended this area be closely checked during scheduled inspections and maintenance.

Part total time-3,335 hours.

AMERICAN EUROCOPTER

American Eurocopter Model BO-105 Engine Allison Model 250C20B — **Engine Failure 7250**

The pilot reported that the Number 2 engine failed while preparing for takeoff.

An investigation disclosed the engine suffered an uncontained first stage turbine wheel (TW) failure. Segments of the TW caused a tear, approximately 9 inches long, in the center of the firewall. The TW then entered the tail boom tunnel, struck the Number 1 tail rotor drive shaft hangar bearing support, and destroyed the mount. This produced an imbalance of the forward drive shaft, damaging the drive shaft coupling. The forward tail rotor long shaft hangar separated from the tail boom cone. The Number 1 engine combustion section and the air discharge tubes were also damaged. The cause of this failure has not been determined.

Engine total time-12,959 hours.

MCDONNELL DOUGLAS

McDonnell Douglas Model MD 900 — **Tail Boom Assembly 5500**

Ice was found in the tail boom assembly while complying with Service Bulletin (SB) 900-023.

The ice was discovered at the thruster assembly break line after removal of the thruster assembly. A section of ice (approximately 2 feet long, 8 inches wide, and .75 inch thick) was removed. The drain hole in this area was open. Ice buildup in the tail

boom could cause a problem with center-of-gravity, restriction of antitorque airflow, and/or damage to the fan assembly. It was stated the inlet on top of the aircraft allows water to run down into the tail boom. This water may freeze with the drain hole closed and cause further ice buildup. Operators should inspect for tail boom ice buildup during cold and/or wet weather operation. The submitter suggested the manufacturer provide better drainage in this area.

Part total time-399 hours.

SCHWEIZER

Schweizer
Model 269C-1

Fuel Quantity System Malfunction
2842

A precautionary landing was necessary due to illumination of the "low fuel" light.

An investigation revealed the fuel quantity float (P/N 7740-00190) was contacting the "low fuel" sending unit. This prevented the float from dropping as the fuel level lowered and produced an indication of approximately 8 gallons of fuel remaining. The sending unit float arm could be seen through the fuel tank filler cap. Removal of the sending unit revealed the float arm had been bent. Bending of the float arm, for calibration of the fuel quantity system, is a common practice. Normally, the float arm is bent in a vertical direction which allows sufficient clearance from all other components. However, the float arm (in this case) had been bent in a lateral direction causing interference with the "low fuel" sending unit. It was speculated this condition originated at the factory since the maintenance records did not indicate any prior fuel system problems or maintenance, and the available evidence appeared to support that conclusion.

Part total time-980 hours.

AGRICULTURAL AIRCRAFT

PIPER

Piper
Model PA-25-250
Pawnee

Throttle Cable Failure
7603

The engine throttle cable failed during an annual inspection engine operational test.

The throttle cable (P/N 30929-02) broke inside the outer housing. After removal, the outer cable housing was removed, and the inner cable was found severely worn at the failure point. The submitter inspected another like aircraft and discovered the same wear pattern in the throttle cable. The submitter recommended the throttle cable be replaced on like aircraft with 3,000, or more, hours of operation.

Part total time-3,000 hours.

AMATEUR, EXPERIMENTAL, AND SPORT AIRCRAFT

We would like to take this opportunity to encourage all those involved with amateur-built and ultralight aircraft to actively participate in the FAA's Service Difficulty Program (SDP).

Many of you may not be aware of the benefits and products derived from the SDP. All of the information you furnish is entered into the SDP data base. Some of your submissions are chosen to be printed in this publication. By submitting service difficulty information, you make it available to the entire aviation community. The SDP data base contains information dating back to 1978. That information is available (in most cases free of charge) upon request.

The SDP Information Management Section (AFS-620) fills requests from the aviation public concerning specific aircraft and/or

parts. You may write to: AFS-620 at the following address. FAA; ATTN: AFS-620; PO Box 25082; Oklahoma City, OK 73125. The AFS-620 telephone number is (405) 954-4173.

KIS

Kis **Wing Attachment**
Model TD-1 **Damage**
5741

While taxiing the aircraft over a rough surface, the pilot noticed an abnormal popping sound which seemed to come from the left side of the aircraft. The intended flight was aborted, and the aircraft was returned to the hangar for maintenance.

An investigation revealed vertical movement at the left wing forward attachment point. After removal of the wing, the spar bushing was found elongated in a direction vertical to its installed position. This bushing is made of aluminum, and the submitter speculated it may be better to use 4130 steel for this application. The attachment bolt, being loose in the hole, may have been a contributing factor to elongation of the bushing.

Part total time-350 hours.

RUTAN

Rutan **Engine Fuel**
Model Long EZ **Starvation**
2820

The aircraft lost engine power during takeoff, which required that an immediate emergency landing be made.

The pilot stated the fuel selector was in the "left" tank position, and that tank indicated 3 gallons of fuel. The fuel boost pump was in the "on" position. The only cause of engine failure found (after a thorough investigation) was insufficient fuel quantity in the left tank to supply fuel to the engine at takeoff attitude. The fuel quantity gauges had not been marked to warn of minimum fuel supply during takeoff attitude. It was recommended that builders perform a test for engine fuel supply at the extremes of all aircraft flight attitudes. After the test is completed, the fuel quantity gauges should be marked accordingly with a built-in safety factor.

Part total time not reported.

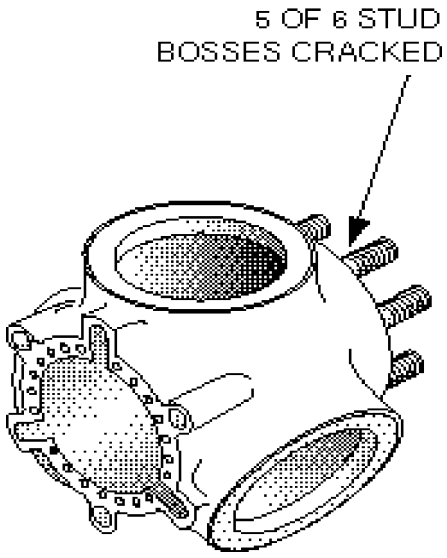
PROPELLERS AND POWERPLANTS

McCAULEY

McCauley **Hub Cracks**
Model D3A32C88MR **6114**

During an annual inspection, the maintenance technician discovered the propeller hub was cracked.

The propeller hub was cracked adjacent to five of the six mounting studs. (Refer to the following illustration.) The propeller had accumulated approximately 40 hours of operating time since the last overhaul, which was done in January 1996.



TEXTRON LYCOMING

Textron Lycoming Model IO 540 **Detonation Damage 8530**

During a test flight, the pilot noticed a large stream of oil coming from the oil filler door on the right engine. The engine was shut down, and a safe landing was made.

Troubleshooting revealed a "dime-sized" hole in the Number 2 cylinder piston. Also, there were signs of severe detonation. The submitter could not determine the cause of this defect. The engine was removed for overhaul.

Part time since overhaul-532 hours.

ACCESSORIES

BENDIX FUEL COUPLING FLAW

A preinstallation inspection of a fuel coupling for a fuel control unit revealed a subsurface flaw.

The plastic drive coupling (P/N 3024973) had a flaw running longitudinally down the female spline. This coupling is used between the engine-driven fuel pump and the fuel control unit. Failure of this coupling would result in engine failure. A thorough receiving inspection of all parts is recommended.

Part total time-"0" hours.

AIR NOTES

SUN 'N FUN '97

The 1997 SUN 'N FUN EAA International Aviation Convention/Airshow/Fly-In is scheduled for April 5 through April 12, 1997, at Lakeland Linder Airport in Lakeland, Florida.

The FAA Safety Center auditorium will host forums and seminars throughout the airshow. There will also be presentations from most of the major aviation organizations which will cover the entire gamut of general aviation activities and interests. The staff of this publication will occupy a booth in the FAA Safety Center. We will have literature and information concerning the Service Difficulty Reporting (SDR) Program and the services and products available to the aviation public. We look forward to another excellent event and hope to see you.

AIRWORTHINESS DIRECTIVES (AD'S) ISSUED IN NOVEMBER 1996 (For Small Aircraft, Engines, and Appliances)

96-22-16	HB Aircraft AG HB-23 2400 Hobbyliner/Scanliner Sailplanes rudder bearing support bracket.
96-24-13	Piper PA-31, PA-31P, and PA-31T Series landing gear selector cable.
96-23-18	Aerospace N22B, N24A, N22S fuselage stub fin plate.
96-24-05	Aerospace N22B, N22S, N24A flap and aileron control rod fork ends.
96-24-04	Aerospace N22B, N22S, N24A tailplane stabilizer center section.
96-23-19	Air Tractor AT-300, AT-400, and AT-500 flap actuator overtravel stop and roll pin.
96-24-08	Air Tractor AT-250, AT-300, AT-301, AT-302, AT-400, AT-400A, AT-401, AT-402, AT-501, and AT-502 parking brake valve.
96-24-07	HOAC Austria Model DV-20 Katana muffler.
96-22-13	Pilatus PC-6 loose or sheared rivets.
96-23-10	Pratt & Whitney JT3D series turbofan engines steel disk.

96-24-09	Allison Engine 250-C47B turboshaft engines harness assembly.
96-23-01	Bell 206L-1 TOT indicator.
96-24-06	Priority letter on Cessna 560 icing conditions.
96-23-16	Emergency AD on Fokker F28 Mark 0070 and 0100 series thrust reverser.
96-24-10	Fokker F28 Mark 0070 and 0100 series thrust reverser.

AIRWORTHINESS DIRECTIVES (AD'S) ISSUED IN DECEMBER 1996 (For Small Aircraft, Engines, and Appliances)

96-26-02	FLS Aerospace Ltd. OA7 Optica Series 300 Airplanes equipped with Hoffman fan.
96-24-17	Luscombe Aviation, all eight models, wing spar failure.
96-25-02	Mitsubishi Model MU-2B series, icing protection system.
96-25-10	Pratt & Whitney JT9D series turbofan engines, prevent release of debris from TEC.
96-23-03	Textron Lycoming recip engines, high pressure fuel pumps.
96-23-14	Pratt & Whitney JT8D series turbofan engines, cracks in rear flange.
96-23-15	Pratt & Whitney JT8D-200 series turbofan engines, inspection of fan blades.
96-25-11	CFM Intl Model CFM56-3C-1 and CFM56-3B-2 turbofan engines, fan blades.
96-25-12	Sundstrand T-62T-40C series APU's.
97-01-04	Textron Lycoming recip engines with Superior Air Parts PMA P/N SL54000-A( ).

ALERTS ON LINE

We have received several requests to make the information contained in AC 43-16, General Aviation Airworthiness Alerts, available electronically. Therefore, this publication is now available through the FedWorld Bulletin Board System (BBS), via the Internet.

You may directly access the FedWorld BBS at telephone number (703) 321-3339. To access this publication through the Internet, use the following address.

http://www.fedworld.gov/ftp.htm

This will open the "FedWorld File Transfer Protocol Search And Retrieve Service" screen. Page down to the heading "Federal Aviation Administration" and select "FAA-ASI". The file names will begin with "ALT", followed by three characters for the month, followed by two digits for the year (e.g. "ALTJUN96.TXT"). The extension "TXT" indicates the file is viewable on the screen and also available to download.

Beginning July 1996, we are using the Adobe Acrobat software program format to upload this monthly publication. This change is necessary to include the illustrations which are associated with various articles. The file names will still begin with "ALT", followed by three characters for the month, followed by two digits for the year; however, the extension will be "PDF" (e.g. "ALTJUL96.PDF"). The extension "PDF" indicates it will be necessary to download the files for viewing. The Adobe Acrobat Viewer is available for download from the Internet (free of charge) and will allow the files to be read.

You may still access the "TXT" extension for issues of this publication prior to July 1996.

Also, available at this address are the Service Difficulty Reports which may be of interest.

The Regulatory Support Division (AFS-600) has established a "HomePage" on the Internet, through which the same information is available. The address for the AFS-600 "HomePage" is:

http://www.mmac.jccbi.gov/afs/afs600

Also, this address has a large quantity of other information available. There are "hot buttons" to take you to other locations and sites where FAA Flight Standards Service information is available. If you have any questions, our "E-mail" address follows.

Other requests have been received indicating a need to make the staff of this publication more available to our readers. To provide greater and more flexible access for you to offer information and ask questions, you may contact us by using any of the following methods.

Editor: Phil Lomax, AFS-640

Telephone Number: (405) 954-6487

FAX Number: (405) 954-4570 or (405) 954-4748

Internet E mail address:
ga-alerts@mmacmail.jccbi.gov

Mailing Address:
FAA
ATTN: AFS-640 (Phil Lomax)
P.O. Box 25082
Oklahoma City, OK 73125-5029

We hope this will allow you to contact us by a means which will be convenient and save some of your time. We welcome the submission of aircraft maintenance information via any form or format. This publication provides an opportunity for you to inform the general aviation community of the problems you have encountered. The Service Difficulty Reporting (SDR) program also brings the problems to the attention of those who are able to resolve the problems. Your participation in the SDR program is vital so accurate maintenance information is available to the general aviation community.

FAA FORM 8010-4, MALFUNCTION OR DEFECT REPORT

For your convenience, FAA Form 8010-4, Malfunction or Defect Report, will be printed in every issue of this publication.

You may complete the form, fold, staple, and return it to the address printed on the form. (No postage is required.)

SUBSCRIPTION REQUEST FORM

For your convenience, a Subscription Request Form for AC 43-16, General Aviation Airworthiness Alerts, is printed in every issue.

If you wish to be placed on the distribution list, complete the form, and return it, in a stamped envelope, to the address shown on the form.

OMB No. 2120-0003

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

MALFUNCTION OR DEFECT REPORT

OPER. Control No.
ATA Code
1. A/C Reg. No. N-

Enter pertinent data:	MANUFACTURER	MODEL/SERIES	SERIAL NUMBER
2. AIRCRAFT			
3. POWERPLANT			
4. PROPELLER			

5. SPECIFIC PART (of component) CAUSING TROUBLE

Part Name	MFG. Model or Part No.	Serial No.	Part/Defect Location

6. APPLIANCE/COMPONENT (Assembly that includes part)

Comp/Appl Name	Manufacturer	Model or Part No.	Serial Number

Part TT	Part TSO	Part Condition	7. Date Sub.

8. Comments (Describe the malfunction or defect and the circumstances under which it occurred. State probable cause and/or corrective actions to prevent recurrence.)

Optional Information:

Check a box below, if this report is related to an aircraft

☐ Accident; Date _____ ☐ Incident; Date _____

DISTRICT OFFICE	OPERATOR DESIGNATOR
OTHER	
COMMUTER	
FAA	
U.P.S.	
AIR TAXI	
U.S.CH.	
OPER.	SUBMITTED BY:
REP. AIRL.	TELEPHONE NUMBER: ( ) —

FAA Form 8010-4 (10-88) SUPERSEDES PREVIOUS EDITIONS

Use this space for continuation of Block 8 (*if required*).

U.S. Department
of Transportation

Federal Aviation Administration

Flight Standards Service
Maintenance Support Branch
P.O. Box 25082
Oklahoma City, OK 73125

AFS-640

Official Business
Penalty for Private Use $300

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST CLASS PERMIT NO. 12438 WASHINGTON, D.C.

Federal Aviation Administration
AFS-640 (Alerts)
P.O. Box 25082
Oklahoma City, OK 73125-5029

SUBSCRIPTION REQUEST FORM

ADVISORY CIRCULAR (AC) 43-16, GENERAL AVIATION AIRWORTHINESS ALERTS

Please use this request to subscribe to AC 43-16 or to change your address if you are presently on the mailing list. Once your name has been entered, you will continue to receive this publication until you request your name be removed or a copy is returned because of an incorrect address.

Because this mailing list is independent of other FAA mailing lists, it is necessary that you notify us when your address changes. (Our address is on the following subscription request.) If you are presently receiving this publication it is **NOT** necessary to send another subscription request. The following subscription request may be duplicated, as necessary. **TELEPHONE REQUESTS WILL ALSO BE ACCEPTED; THE TELEPHONE NUMBER IS (405) 954-6487. THE FAX NUMBERS ARE: (405) 954-4748 and/or (405) 954-4570.**

AC 43-16 SUBSCRIPTION REQUEST

If you would like to **BEGIN** receiving AC 43-16, or **CHANGE** your address, please complete the following:

PLEASE PRINT INFORMATION LEGIBLY, INCLUDE YOUR ZIP CODE, AND THE DATE OF YOUR REQUEST.

NAME: _____

ADDRESS: _____

_____

_____

ZIP CODE _____

DATE: _____

CIRCLE ONE OF THE FOLLOWING:

1. This is a **NEW** subscription.
2. This is an **ADDRESS CHANGE**.

SEND **ONLY ONE** SUBSCRIPTION REQUEST TO THE FOLLOWING ADDRESS:

FAA, Regulatory Support Division
ATTN: AFS-640 (Phil Lomax)
P.O. Box 25082
Oklahoma City, OK 73125-5029

If you require more than one copy of AC 43-16, it may be reproduced.

U.S.Department
of Transportation

Federal Aviation Administration

Maintenance Support Branch
ATTN: ALERTS, AFS-640
P.O. Box 25082
Oklahoma City, OK 73125-5029

AFS-640

Official Business
Penalty for Private Use $300

BULK MAIL
POSTAGE & FEES PAID
Federal Aviation
Administration
PERMIT No. G44